

## CLAIMS

What is claimed is:

1. A method comprising:  
producing a modulated signal, the modulated signal being modulated over a plurality of amplitude levels, including at least a first amplitude level, a second amplitude level and a third amplitude level, and over a plurality of time slots, including at least a first time slot, a second time slot, and a third time slot, the modulated signal:  
transitioning from the first amplitude level to the second amplitude level  
in the first phase slot,  
remaining at the second amplitude level in the second time slot, and  
transitioning from the second amplitude level to the third amplitude level  
in the third time slot; and  
transferring the modulated signal.
2. The method of claim 1, wherein the modulated signal is orthogonal.
3. The method of claim 1, wherein producing the modulated signal further comprises remaining at the second amplitude level for a plurality of time slots.
4. The method of claim 1, wherein producing the modulated signal further comprises:  
transitioning from the third amplitude level to the second amplitude level in a fourth phase slot,  
remaining at the second amplitude level in a fifth time slot, and

transitioning from the second amplitude level to the first amplitude level in a sixth time slot.

5. The method of claim 1, wherein producing the modulated signal further comprises transitioning from the third amplitude level to an amplitude level other than the first amplitude level.
6. The method of claim 1, wherein a transition between amplitude levels occurs over a plurality of time slots.
7. The method of claim 1, wherein transferring the modulated signal comprises transmitting the modulated signal over a communication channel.
8. The method of claim 1, wherein transferring the modulated signal comprises transferring the modulated signal over a bus.
9. A method comprising:  
generating a modulated signal using a first modulation mode and a second modulation mode, the first modulation mode having a plurality of different positions including at least a first position, a second position, and a third position, the second modulation mode having a plurality of different positions, including at least a first position, a second position, and a third position;  
the modulated signal transitioning from the first position to the second position of the first modulation mode while in the first position of the second modulation mode;

the modulated signal remaining in the second position of the first modulation mode while in the second position of the second modulation mode; and the modulated signal transitioning from the second position to the third position of the first modulation mode while in the third position of the second modulation mode.

10. The method of claim 9, further comprising transferring the modulated signal over a communication channel.
11. The method of claim 9, wherein the first modulation mode comprises signal amplitude.
12. The method of claim 11, wherein the second modulation mode comprises signal phase.
13. The method of claim 9, wherein the modulated signal is orthogonal.
14. The method of claim 9, wherein the modulated signal further:  
transitions from the third position to the second position of the first modulation mode while in a fourth position of the second modulation mode;  
remains in the second position of the first modulation mode while in a fifth position of the second modulation mode; and  
transitions from the second position to the first position of the first modulation mode while in a sixth position of the second modulation mode.
15. The method of claim 9, wherein the modulated signal further transitions from the third position of the first modulation mode to a position other than the second

position of the first modulation mode.

16. The method of claim 9, wherein a transition between positions of the first modulation mode occurs over a plurality of positions of the second modulation mode.
17. A method comprising:  
producing a modulated signal, the modulated signal, the modulated signal being  
modulated over a plurality of amplitude levels, including at least a first  
amplitude level, a second amplitude level, and a third amplitude level, and  
over a plurality of phase slots, including at least a first phase slot, a second  
phase slot, and a third phase slot, the modulated signal:  
transitioning from the first amplitude level to the second amplitude level  
in the first phase slot,  
remaining at the second amplitude level in the second time slot, and  
transitioning from the second amplitude level to the third amplitude level  
in the third time slot;  
transferring the modulated signal;  
receiving the modulated signal; and  
demodulating the modulated signal.
18. The method of claim 17, wherein the modulated signal is orthogonal.
19. The method of claim 17, wherein the modulated signal remains at the second  
amplitude level for a plurality of phase slots.

20. The method of claim 17, wherein the modulated signal further transitions from the third amplitude level to the first amplitude level in a fourth phase slot.
21. The method of claim 17, wherein the modulated signal further transitions from the third amplitude level to the second amplitude level in a fourth phase slot, remains at the second amplitude level in a fifth phase slot, and transitions from the second amplitude level to the first amplitude level in a sixth phase slot.
22. The method of claim 17, wherein the modulated signal further transitions from the third amplitude level to a level other than the first amplitude level.
23. The method of claim 17, wherein a transition between amplitude levels occurs over a plurality of phase slots.
24. A method comprising:  
obtaining a data signal;  
modulating the data signal to form a modulated signal, the modulated signal being one of a plurality of modulated signals, the plurality of modulated signals being modulated over amplitude levels, including at least a first amplitude level, a second amplitude level, and a third amplitude level, and over phase slots, the plurality of modulated signals comprising:  
a signal that:  
transitions from the first amplitude level to the second amplitude level in one of a first plurality of phase slots; and  
transitions from the second amplitude level to the first amplitude level in one of a second plurality of phase slots; and

a signal that:

transitions from the first amplitude level to a third amplitude level in one of the first plurality of phase slots; or transitions from the first amplitude level to the second amplitude level in a first slot of the first plurality of phase slots, remains at the second amplitude level for a second slot of the first plurality of phase slots, and transitions from the second amplitude level to the third amplitude level in a third slot of the first plurality of phase slots; and

transitions from the third amplitude level to the first amplitude level in one of the second plurality of phase slots; or transitions from the third amplitude level to the second amplitude level in a first slot of the second plurality of phase slots, remains at the second amplitude level for a second slot of the second plurality of phase slots, and transitions from the second amplitude level to the first amplitude level in a third slot of the second plurality of phase slots.

25. The method of claim 24, wherein the modulated signal is orthogonal.
26. The method of claim 24, further comprising transferring the modulated signal from a first unit to a second unit over a communication channel.
27. The method of claim 24, wherein the plurality of modulated signals further

includes a signal that transitions to the third amplitude level, and then transitions from the third amplitude to a level other than the first amplitude level.

28. The method of claim 24, wherein a transitioning between amplitude levels occurs over a plurality of phase slots.

29. A device comprising:

an output to a communication channel; and

a signal generator to produce a modulated signal on the communication channel,

the modulated signal comprising:

a first modulation mode, the modulated signal having a plurality of

possible positions in the first modulation mode, and

a second modulation mode, the modulated signal having a plurality of

possible positions in the second modulation mode;

the modulated signal transitioning from a first position to a second position in the

first modulation mode while in a first position of the second modulation

mode;

the modulated signal remaining in the second position in the first modulation

mode while in a second position of the second modulation mode; and

the modulated signal transitioning from the second position to a third position in

the first modulation mode while in a third position of the second

modulation mode.

30. The device of claim 29, wherein the first modulation mode comprises signal amplitude.

31. The device of claim 30, wherein the second modulation mode comprises signal phase.
32. The device of claim 29, wherein the modulated signal is orthogonal.
33. A system comprising:  
a communication channel;  
a first device to transfer a modulated signal over the communication channel, the modulated signal:  
transitioning from a first amplitude level to a second amplitude level in a first phase slot,  
remaining at the first amplitude level in a second time slot, and  
transitioning from the second amplitude level to a third amplitude level in a third time slot; and  
a second device to receive the modulated signal over the communication channel.
34. The system of claim 33, wherein the modulated signal is orthogonal.
35. The system of claim 33, wherein the modulated signal remains at the first amplitude level for a plurality of time slots before transitioning to the second amplitude level.